

WEIL-McLAIN

an A.O. Smith Corporation Company

GOLD

CGi

Series 2

**GAS BOILER
for
Direct
Exhaust
(Induced Draft)**

Water Net Ratings:
37,000 to
169,000
Btu/Hr.

Applications:

- Residential
- Multiple Boilers
- Schools and
Other Institutions
- Indirect-fired
Water Heating
- Radiant Heating
- ... And Much More



- Easy to Install and Service
- Unique Control Technology
- Made with Weil-McLain Quality

CGi

Series 2

GAS BOILER for Sidewall or Natural Draft Venting (Induced Draft)

Water Net Ratings:
**37,000 to
169,000
Btu/Hr.**



Design Advantages



Cast Iron Sections with Elastomer Sealing Rings

Boiler sections are made of durable cast iron for strength, efficiency and long life. It's not uncommon for a Weil-McLain cast iron boiler to last 35 years or more.

The heat pins in the vertical flue passages cause the hot gases to swirl about, covering the entire surface of each section for maximum heat transfer. Radiation plates further increase heat transfer for maximum efficiency.

Modern elastomer sealing rings in the port openings assure a permanent water-tight seal. The flexibility and elastic memory of these seals (unlike metal push nipples) prevent leaks caused by thermal expansion and contraction.

A special high-temperature sealant between boiler sections assures tightness from gas leakage in the block.



High-Grade Stainless Steel Burners

European-designed, high-grade stainless steel burners have internal venturi air flow technology for accurate mixture of fuel and air. This provides for maximum efficiency in fuel usage.

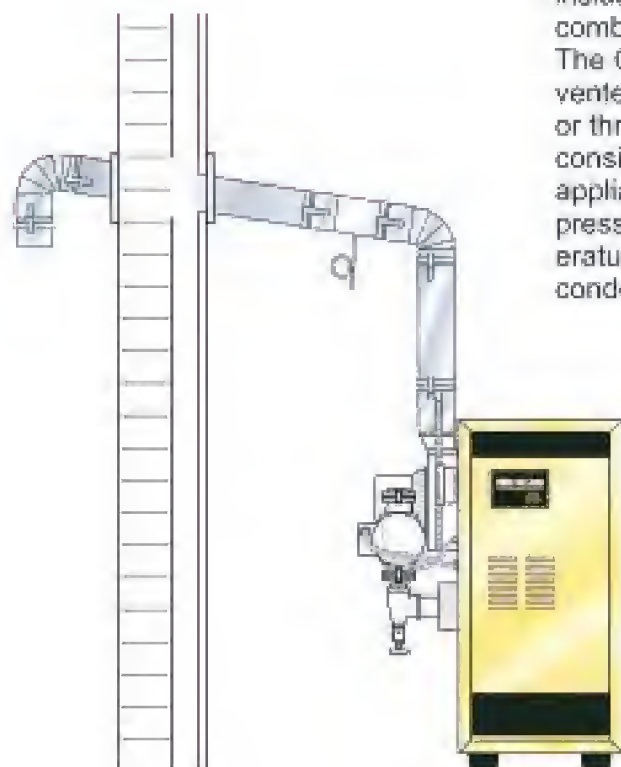
These burners are made entirely of stainless steel and designed so the burner ports provide exceptional stability with natural or propane gas for quieter operation, longer life, and improved combustion.

Venting Flexibility

The CGi boiler has the flexibility to be vented one of two ways ...

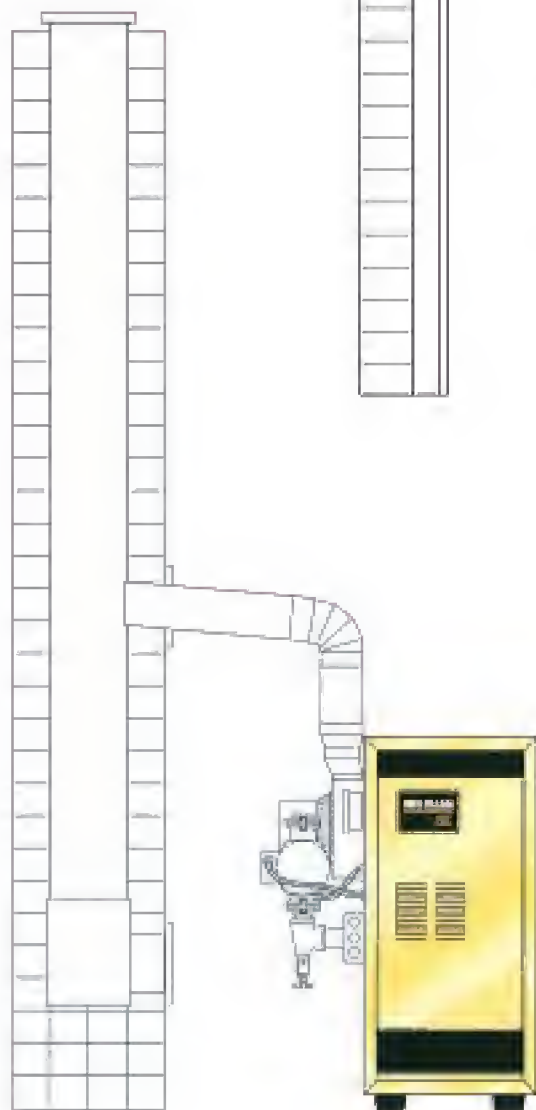
Direct Exhaust Venting

Direct exhaust venting (also known as "induced draft"): uses inside combustion air with no combustion air connector piping. The CGi boiler can be non-direct vented either through a side wall or through the roof. This is considered a Category III appliance; positive vent static pressure and vent gas temperature that avoids excessive condensate in vent.

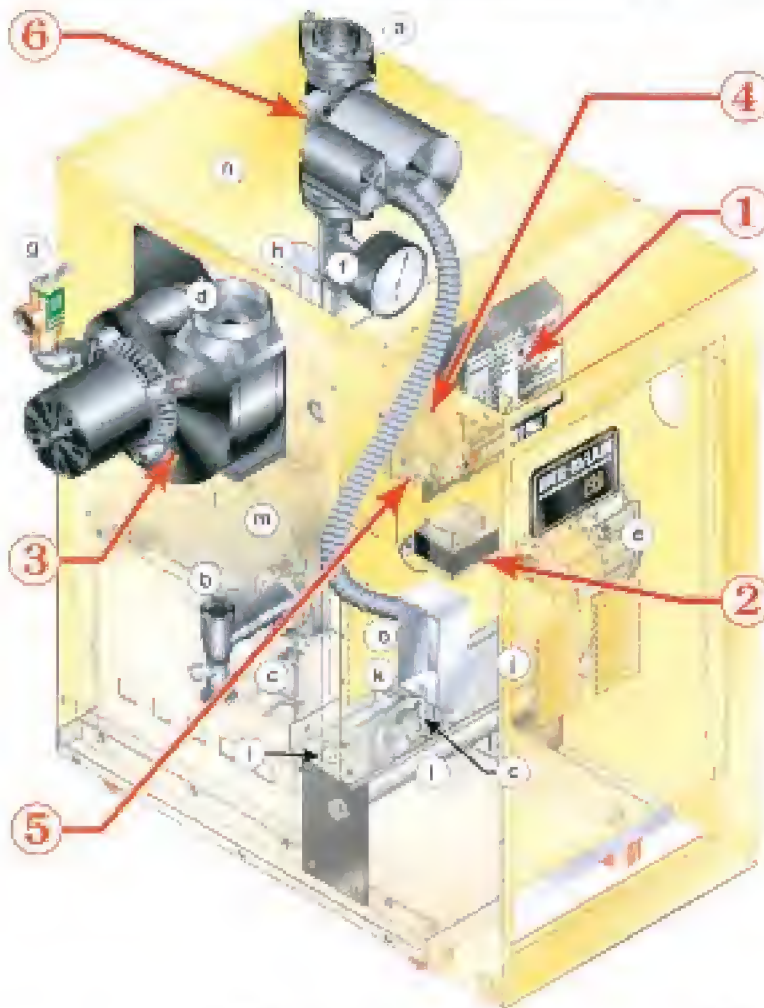


Natural Draft Venting

Natural draft venting (also known as "chimney draft venting"): uses the natural draft provided by a vertical vent or chimney. This is considered a Category I appliance; non-positive vent static pressure and vent gas temperature that avoids excessive condensate in vent.



Sequence of Operation



① Control Module

② Transformer

③ Inducer

④ Air pressure switch

⑤ Limit switch

⑥ Boiler circulator

a Supply to system

b Return from system

c Stainless steel burners

d Flue outlet

e Gas valve

f Pressure/temperature gauge

g Relief valve

h Air vent connection

i Flame rollout thermal fuse element

j Burner shield

k Pilot burner and bracket

l Gas manifold

m Cast iron boiler sections

n Flue collector

o Junction box

How the boiler works ...

When a room thermostat calls for heat, the control module starts the system circulator and inducer. The control module runs the inducer long enough to purge the boiler flue passages, then opens the pilot valve and activates the pilot ignition spark.

The control module allows up to 15 seconds to establish pilot flame. If flame is not sensed within 15 seconds, the control module will turn off the gas valve, flash the Flame light, and then enter a 15-second postpurge. The control module will then start a new cycle. This will continue indefinitely until pilot flame is established or power is interrupted. Once pilot flame is proven, the control module opens the gas valve to allow main burner flame.

When the room thermostat is satisfied, the control module turns off the gas valve and pilot valve, operates the inducer for a 15-second postpurge and waits for the next call for heat.

The control module indicator lights show normal sequence when the lights are on steady. When a problem occurs, the control module flashes a combination of lights to indicate the most likely reason for the problem.

Features ... Advantages ... Benefits

- **Well-McLain Control Module and Ignition Control.** Designed for Well-McLain ... mistake-proof wiring ... diagnostic indicator lights.
- **Compact design.** Saves valuable living space. Boiler is only 28 inches high, 23 inches deep. Power venting eliminates the need for a draft hood.
- **High-grade stainless steel burners.** European-designed, high-grade stainless steel burners for quiet ignition, longer life, and improved combustion.
- **Wiring harness.** Plug-in connectors that attach only one way to assure mistake-proof wiring for installation and component replacement.
- **Easy power hook-up.** J-box located on outside of boiler with pre-stripped wires.
- **Convenient servicing.** Accessible controls ... control module with diagnostic indicator lights ... simplified wiring ... vertical flueways ... top cleaning.
- **Factory-tested.** Every boiler is tested at the factory to assure reliable operation.
- **Improved parts kits.** Parts furnished in convenient kits.
- **Limited lifetime warranty.** Covers cast iron sections.
- **Multiple boiler systems.** Use two or more high-efficiency CGi boilers in place of one large-capacity boiler to meet the space-heating requirements of larger buildings.
- **Homeowner Protection Plan.** Covers labor and all Well-McLain supplied parts for 5 or 10 full years. Available through participating installers.

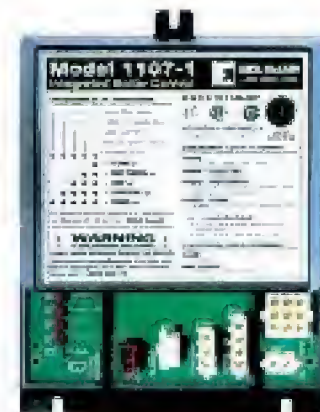
Well-McLain Control Module and Ignition Control

The control module has:

- five indicator lights — power, thermostat & circulator, limit, pressure switch, flame — that show proper operation and make troubleshooting easy.
- plug-in connectors that attach only one way to assure mistake-proof wiring if components ever need to be replaced.

The control module responds to signals from the room thermostat, air pressure switch, and boiler limit control to operate the boiler circulator, pilot burner, gas valve, and inducer. The module controls all ignition, operating and safety-related functions. In addition, its microprocessor continually checks itself 60 times each second. If a situation such as electrical "noise" or low voltage is encountered, the control module restarts and retries, eliminating nuisance lockouts.

And regardless of future control improvements, the Well-McLain control module assures newer controls will always fit.



Temperature & Pressure Gauge

All CGi boilers come with a large-faced temperature and pressure gauge, which installs in a tee in the boiler supply on the top of the boiler.

By installing the gauge in the system supply flow, a more accurate reading is provided. Also, the location of the gauge and the larger face provide for easy monitoring of boiler temperature and pressure.



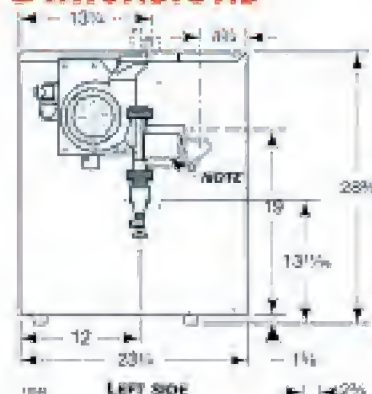
Ratings



Boiler Model (1)	Input MBH (2)	DOE Heating Capacity MBH (2)	Net I=B=R Water Ratings MBH (3)	DOE Seasonal Efficiency Percent (AFUE)	Approx. Shipping Weight (Lbs)	Boiler Water Content (Gall)	Minimum Vent Connector Diameter (4)
CGi-25	50	42	37	84.0	280	1.5	4" I.D.
CGi-3	60	51	45	85.1	200	1.5	4" I.D.
CGi-4	100	85	74	84.0	240	2.1	5" I.D.
CGi-5	120	100	87	83.3	280	2.7	5" I.D.
CGi-6	167	140	122	83.3	325	3.3	5" I.D.
CGi-7	200	167	145	83.0	370	3.8	5" I.D.
CGi-8	233	194	169	82.7	425	4.4	5" I.D.

Notes: (1) Add "PH" for natural gas, "PL" for propane.
 (2) Based on standard test procedures prescribed by the United States Department of Energy.
 (3) Net I=B=R ratings are based on net installed radiation of sufficient quantity for the requirements of the building and nothing need be added for normal piping and pick-up. Ratings are based on a piping and pick-up allowance of 1.15. An additional allowance should be made for unusual piping and pick-up loads.
 (4) Refer to National Fuel Gas Code, ANSI Z223.1-latest edition for chimney slope and vent connector lengths.
 CGi boilers are C.S.A. design certified for installation on combustible flooring. Tested for 50 psi working pressure.

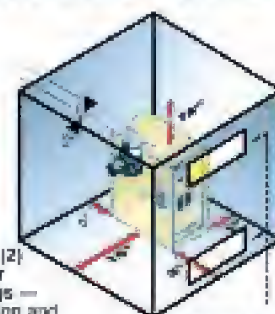
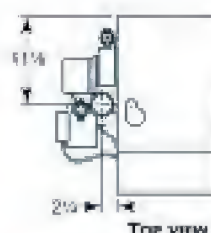
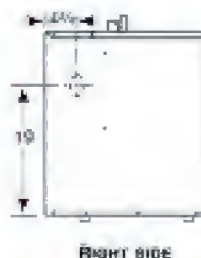
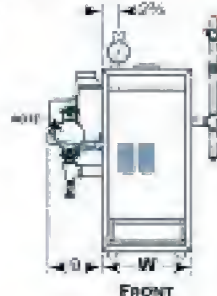
Dimensions



Boiler Model	Dimension Inches W	Supply Piping In. (1)	Return Piping In. (1)	Nat or LP Gas Connection Size Inches	Crate Dimensions (Outside Measurements - In.)		
					Length	Width	Height
CGi-25	10	3/4	3/4	1/2	27	27 1/2	31 1/2
CGi-3	10	1	1	1/2	27	27 1/2	31 1/2
CGi-4	13	1	1	1/2	27	27 1/2	31 1/2
CGi-5	16	1	1	1/2	30	27 1/2	31 1/2
CGi-6	19	1 1/4	1 1/4	1/2	33	27 1/2	31 1/2
CGi-7	22	1 1/4	1 1/4	3/4	36	27 1/2	31 1/2
CGi-8	25	1 1/4	1 1/2	3/4	42	27 1/2	31 1/2

Notes: (1) Circulator flange supplied with boiler is same size as recommended pipe size. For supply and return boiler tapping size, see installation manual.

NOTE: Boiler circulation is shipped down. Circulator may be mounted as either boiler supply or return piping. See dimension chart for pipe size of circulation flange provided.



Provide (2) fresh air openings — 6" from top and 6" from bottom located on wall next to boiler front.

Each opening must have free area of 1 square inch per 1,000 Btu/h of CGi boiler input.

Standard and Additional Equipment

Standard Equipment:

Factory Tested
 Two-Piece Top Jacket Panel
 Insulated Extended Steel Jacket
 Cast Iron Sections with Built-in Air Separator
 Radiation Plates
 Steel Base
 Integrated Boiler Control Module with
 Intermittent Electronic Ignition System &
 Indicator / Diagnostic Lights
 Inducer Assembly
 Flue Gas Collector / Transition Assembly
 Combination Gas Valve for 24 Volt
 Wiring Harness

Air Pressure Switch
 Non-Linting Pilot Burner
 High-Grade Stainless Steel Burners
 40VA Transformer
 Electrical Junction Box
 Rollout Thermal Fuse Element
 High-Limit Temperature Control
 Circulator (when ordered)
 30 PSI ASME Relief Valve
 (boiler sections tested for 50 PSI working pressure)
 Combination Pressure-Temperature Gauge
 Drain Valve

Additional Equipment:

CGi AL29-4C® Starter (same as CGs Starter)
 Taco 007 Circulator
 Expansion Tank Package (expansion tank, fill
 & check valve, auto air vent and fittings)
 #109 - sizes 3 thru 5; #110 - sizes 6 thru 8.
 Shipped in separate carton.
 High Altitude Kits
 W-M 5 & 10 Year Homeowner Protection Plan
 W-M Indirect-fired Water Heaters
 W-M Maxillo® Pool Heaters
 W-M Baseboard Units

In the interest of continual improvements in product and performance, Weil-McLain reserves the right to change specifications without notice.



WEIL-McLAIN

Locate our Sales Offices by visiting our website:
www.weil-mclain.com

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